PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PCT1000	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/US05/07444	International filing date *(day/month/year)* 04 March 2005 (04.03.2005)	Priority date *(day/month/year)*
International Patent Classification (IPC) or national classification and IPC IPC: **B23D 21/00**(2006.01) B26D 3/16(2006.01) USPC: 30/101,97,98,95,96,99,102;81/61,60,62,63,63.1,63.2,121.1,57.39		
Applicant OSG POWER TOOLS, INC.		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 3 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
   a. ☐ *(sent to the applicant and to the International Bureau)* a total of ___ sheets, as follows:
      ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
      ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
   b. ☐ *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s)) _____ , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items:
   - ☒ Box No. I Basis of the report
   - ☐ Box No. II Priority
   - ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - ☐ Box No. IV Lack of unity of invention
   - ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - ☐ Box No. VI Certain documents cited
   - ☐ Box No. VII Certain defects in the international application
   - ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand	Date of completion of this report
30 August 2005 (30.08.2005)	12 June 2006 (12.06.2006)
Name and mailing address of the IPEA/ US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Authorized officer For Boyer Ashley J. Luby Telephone No. (571) 272-4501

Form PCT/IPEA/409 (cover sheet)(April 2005)

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/US05/07444

Box No. I Basis of the report

1. With regard to the **language**, this report is based on:
   - ☐ the international application in the language in which it was filed.
   - ☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of:
     - ☐ international search (under Rules 12.3 and 23.1(b))
     - ☐ publication of the international application (under Rule 12.4(a))
     - ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))

2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
   - ☐ the international application as originally filed/furnished
   - ☒ the description:
     pages 1-15 as originally filed/furnished
     pages* 16 and 17 received by this Authority on 30 August 2005 (30.08.2005)
     pages* NONE received by this Authority on _____
   - ☒ the claims:
     pages 18-24 as originally filed/furnished
     pages* NONE as amended (together with any statement) under Article 19
     pages* NONE received by this Authority on _____
     pages* NONE received by this Authority on _____
   - ☒ the drawings:
     pages 1/8-8/8 as originally filed/furnished
     pages* NONE received by this Authority on _____
     pages* NONE received by this Authority on _____
   - ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:
   - ☐ the description, pages _____
   - ☐ the claims, Nos. _____
   - ☐ the drawings, sheets/figs _____
   - ☐ the sequence listing (*specify*): _____
   - ☐ any table(s) related to the sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
   - ☐ the description, pages _____
   - ☐ the claims, Nos. _____
   - ☐ the drawings, sheets/figs _____
   - ☐ the sequence listing (*specify*): _____
   - ☐ any table(s) related to the sequence listing (*specify*): _____

* *If item 4 applies, some or all of those sheets may be marked "superseded."*

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/US05/07444

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims 1-20	YES
	Claims NONE	NO
Inventive Step (IS)	Claims 1-20	YES
	Claims NONE	NO
Industrial Applicability (IA)	Claims 1-20	YES
	Claims NONE	NO

2. Citations and Explanations (Rule 70.7)

Claims 1-20 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest the details of the claimed power and gear system.

Claims 1-20 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

FIGs. 16, 17, 18, and 23 show a power-take-off system integrated on the tool. Cone 151 and brush 152 are rotatably supported and driven by the power of the tool for respective deburring and brushing of tubes. FIG. 18 shows that motor 33 suitably rotates miter gear 153 and pinion gear 154 which is rotatably centered on a shaft 156 and rotates spur gear 166. A housing interior pivotal bracket 157 is also on the shaft 156, and it can pivot left and right about shaft 156, as viewed in FIG. 23, and it rotatably carries idler spur gear 158 which drives and is on a rotatable mounting shaft 159 on bracket 157. As seen in FIG. 23, the interior of shaft 159 has a female hex shape 160 which is respectively exposed to both sides of the housing exterior in the FIG. 23 pivoted position, and is axially aligned with two housing side openings, such as opening 165 in FIG. 18, for reception of mating hex shafts such as that which are on the cone 151 and on the brush 152 for respective and simultaneous rotation drive connections. For acceptable clarity in the drawing, the gears 166 and 158 are shown only in dotted lines as they are the gears that are added to the previous showings. Gear 166 is always in driving contact with idler gear 158.

A lever 161 is pivotally mounted on a housing post 162 to be on the exterior of the housing 10, and it is shown to have a square shape 163 at the housing interior and on the same plane as that of the bracket 157. The square shape presents a corner, as shown, to the edge 164 of the bracket 157 to thereby pivot the bracket 157 leftward, as in the shown pivoted position. So pivoting of the lever 161 will pivot the bracket 157 and thus shift the idler 158 between alternate engagement with the gear 166 and command drive gear 44. Different driven accessories, such as cone 151 and brush 152, can be mounted in the openings 165, as desired.

A compression spring 169 is suitably effective on the bracket 157 to yielding urge the idler 158 into engagement with the gear 44. Upon shifting the lever 161 to its shown

position, that will interrupt the cutting drive. After the cutting is done and the tool is placed in the reverse mode, as explained, to avoid any damage to the motor after the cutting head is abruptly stopped, the idler gear 158 will pop out of tooth engagement and that moves bracket 157 back against the spring 169. That replaces an electronic monitoring circuit disclosed earlier.

On the cutting head stack of Fig. 1, the several gears 16 and 17 and the plate 18 are all held in one steady stack by having sliding circular radial shoulders 171 and 172, in FIGs. 11 and 12, in snug sliding contact with each other, and by having shoulders 173 and 174, in FIGs. 12 and 13, in snug sliding contact. The gears 16 and 17 also sequentially contact each other axially in their stacked relationship, as indicated. So the cutting head is aligned radially, and those several pieces abut axially, all for close guidance of the several parts relative to each other in a unitized stack.

While specific embodiments are shown and described, it will be apparent to one skilled that changes can be made therein, and the scope of this invention should be determined by the appended claims.